WHAT IS CLAIMED IS:

1. A hydrocarbon synthesis process comprising:

(a) forming a synthesis gas by reacting a combustible carbonaceous material and a tail-gas with 1) steam and/or water and 2) oxygen or air or enriched air at an elevated temperature in a gasification reactor;

(b) contacting the said synthesis gas with a hydrocarbon synthesis catalyst to form liquid hydrocarbons and the tail-gas in hydrocarbon synthesis reactor;

(c) separating the resulting tail-gas and the liquid hydrocarbons; and

(d) recycling the tail-gas back the reactor.

2. The process of claim 1 comprising the additional step of removing carbon dioxide from a fraction of the tail-gas and mixing the carbon dioxide-free tail-gas fraction with the synthesis gas prior to contacting the synthesis gas with the hydrocarbon synthesis catalyst.

3. The process of claim 1 comprising the additional step of combusting a fraction of the tail-gas and generating power from said combusted fraction.

4. The process of claim 3 comprising the additional step of removing carbon dioxide from a second fraction of the tail-gas and mixing the carbon dioxide-free tail-gas second fraction with the synthesis gas prior to contacting the synthesis gas with the hydrocarbon synthesis catalyst.

5. A method for consuming a tail-gas produced by reacting a synthesis gas with a hydrocarbon synthesis catalyst comprising reacting the tail-gas and a combustible carbonaceous material with steam and oxygen at an elevated temperature to form the synthesis gas.

6. The method of claim 5 comprising the additional step of removing carbon dioxide from a fraction of the tail-gas and mixing the carbon dioxide-free tail-gas fraction with the synthesis gas prior to reacting the synthesis gas with the hydrocarbon synthesis catalyst.

7. The method of claim 5 comprising the additional step of combusting a fraction of the tail-gas and generating power from said combusted fraction.

8. The method of claim 7 comprising the additional step of removing carbon dioxide from a second fraction of the tail-gas and mixing the carbon dioxide-free tail-gas second fraction with the synthesis gas prior to reacting the synthesis gas with the hydrocarbon synthesis catalyst.